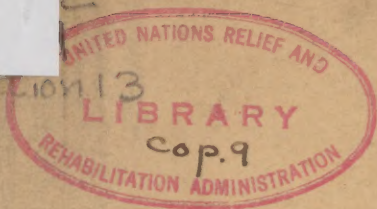


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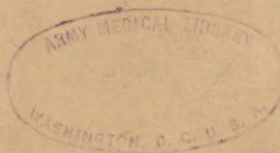
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Section Thirteen

on

PUBLIC HEALTH AND SANITATION



THE MILITARY GOVERNMENT DIVISION
OFFICE OF THE PROVOST MARSHAL GENERAL

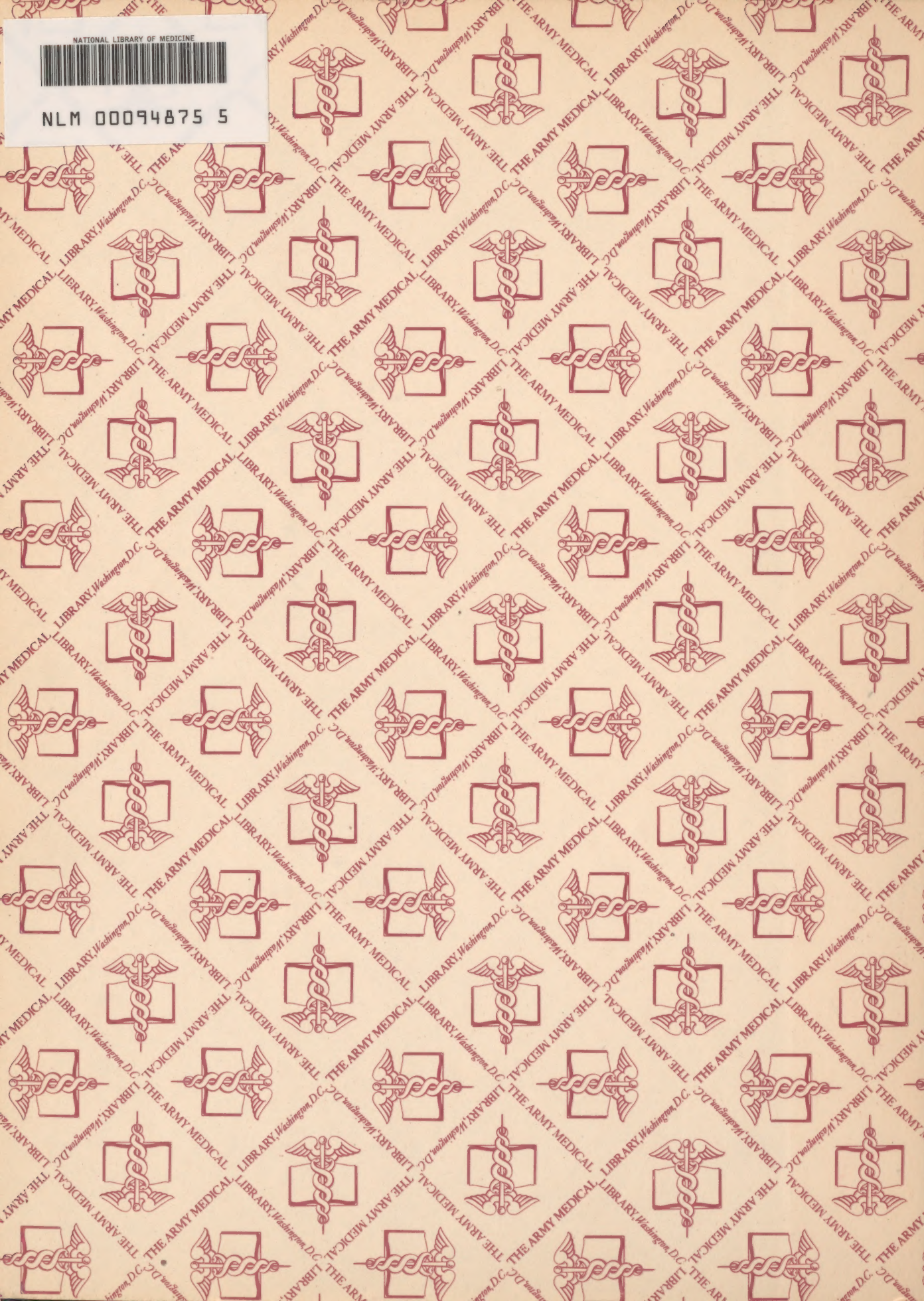
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INTRODUCTION

Purposes of the Civil Affairs Handbook.

International Law places upon an occupying power the obligation and responsibility for establishing government and maintaining civil order in the areas occupied.

The basic purposes of civil affairs officers are thus (1) to assist the Commanding General of the combat units by quickly establishing those orderly conditions which will contribute most effectively to the conduct of military operations, (2) to reduce to a minimum the human suffering and the material damage resulting from disorder and (3) to create the conditions which will make it possible for civilian agencies to function effectively.

The preparation of Civil Affairs Handbooks is a part of the effort of the War Department to carry out this obligation as efficiently and humanely as is possible. The Handbooks do not deal with planning or policy. They are rather ready reference source books of the basic factual information needed for planning and policy making.

Public Health and Sanitation in Greece.

As a result of the various occupations, Greece presents some extremely difficult problems in health and sanitation. The material in this section was largely prepared by the MILBANK MEMORIAL FUND and the MEDICAL INTELLIGENCE BRANCH OF THE OFFICE OF THE SURGEON GENERAL. If additional data on current conditions can be obtained, it will be incorporated in the final draft of the handbook for Greece as a whole.

OFFICERS USING THIS MATERIAL ARE REQUESTED TO MAKE SUGGESTIONS AND CRITICISMS INDICATING THE REVISIONS OR ADDITIONS WHICH WOULD MAKE THIS MATERIAL MORE USEFUL FOR THEIR PURPOSES. THESE CRITICISMS SHOULD BE SENT TO THE OFFICE OF THE CHIEF OF THE SURVEY AND RESEARCH SECTION, MILITARY GOVERNMENT DIVISION, P.M.G.O., 2805 MUNITIONS BUILDING, WASHINGTON, D. C., (OR PHONE WAR DEPARTMENT EXTENSION 76370).

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PUBLIC HEALTH AND SANITATION

CONTENTS

Page

I. Social and Economic Background - a brief summary.....	1
a. Population.....	6
b. Agriculture.....	6
c. Industry and Mineral Production.....	6
d. Communication, Navigation, Shipping, and Commerce.....	7
e. Finance.....	7
f. Religion.....	8
g. Vital Statistics.....	8
II. Organization of Public Health and Public Assistance.....	10
a. Public Health Administration	10
i. Central Organization.....	12
(i) Department of Public Health.....	12
(ii) Department of Social Hygiene	14
(iii) Department of Institutions and Personnel....	15
(iv) Division for the Medical and Phar-	
maceutical Professions.....	16
(v) State Quinine Service.....	17
(vi) Economic Service.....	17
(vii) Venereal Disease Inspection.....	17
(viii) Trachoma Campaign Inspection.....	17
(ix) Inspection of Pharmacies.....	17
ii. Local Health Administration.....	18
b. Medical Institutions.....	21
c. Medical Personnel.....	22
d. Social Insurance.....	23
III. Control and Prevention of Acute and Chronic Diseases,.....	25
a. Chronic Diseases.....	25
i. Tuberculosis.....	25
(i) Mortality.....	25
(ii) Factors of special importance	26
(iii) Organization.....	26
(iv) Local organization	27
(v) Tuberculosis institutions	28
ii. Malaria	29
iii. Venereal Diseases	31
iv. Trachoma	32
v. Leprosy	34
vi. Leishmaniasis	35
b. Acute Infections Diseases	35
i. Plague	35
ii. Cholera	35

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<u>CONTENTS</u> -(continued)	<u>Page</u>
iii. Smallpox.....	36
iv. Exanthematic Typhus and Typhus-like Diseases	36
v. Relapsing Fever.....	37
vi. Typhoid and Paratyphoid Fevers.....	37
vii. Dysentery.....	38
viii. Cerebrospinal Meningitis.....	38
ix. Dengue.....	39
x. Other Diseases.....	40
IV. Public Assistance and Welfare.....	41
a. Protection of Maternity and Infancy.....	41
b. National Orphanages.....	42
c. Aid to Indigents.....	42
d. Special Emergencies.....	42
e. War Victims.....	43
V. Public Relief	43
VI. Appendices	
Appendix A — <u>Maps</u> .	
1. General.....	45
2. Political.....	46
3. Population Density, by Departments, 1938.....	46
4. Tuberculosis Institutions, 1939.....	46
5. Tuberculosis Mortality, 1938.....	46
6. Malaria Mortality, 1930-35.....	47
7. Leprosy, 1926-29.....	47
8. General Hospitals, 1938.....	48
Appendix B — <u>Tables</u> .	
1. Distribution of Population by Geographical Divisions and Departments, 1938, and the Population of Departmental Capitals (census 1928)	50
2. Hospitals and Institutions, 1938.....	51-54
3. Tuberculosis Mortality, 1937.....	55
4. Sanatoriums and Tuberculosis Hospitals, 1939.....	56
Appendix C — <u>Officials and Documents</u> .	
1. Public Health Officials.....	57
2. Official Health Documents.....	57
Appendix D — <u>Insect and Animal Pests</u>	59-61

G R E E C EP U B L I C H E A L T H A N D S A N I T A T I O N

Social and Economic Background - a general summary of pertinent facts.

Modern Greece occupies in Europe an exceptional position. Situated in the southern marginal zone, it is a part of the Balkans and at the same time an essentially Mediterranean country. Located between two powerful countries, Italy and Turkey, Greece controls the outlet to the Mediterranean of her northern neighbors, Yugoslavia and Bulgaria, and to some extent of Roumania and the U.S.S.R. Recent developments of aerial transportation gave new importance to many of Greece's islands.

The geographical environment of the Greek people which played a very large part in developing Hellenic civilization is still influencing the life of Greece and accounts for many aspects of her present development.

The main historical factors forming a background to the recent situation of Greece can be summarized as follows:

1. Cultural and religious unity of the Greek people achieved, and maintained throughout many centuries on the mainland, in the islands, and in distant colonies.
2. Ability to assimilate all foreign elements which invaded the country in the course of its history.
3. Solidarity of Greeks throughout the Mediterranean world and the unflinching belief in the final union of all settlements, justified by the steady territorial growth between 1830 and 1920.

4. The profound influence of the defeat by Turkey (1923) and of the subsequent influx of refugees increasing the total population by one-fifth.

(1) Common culture and religion and the maritime trade between the settlements and the mainland account to a large extent for the survival of Greece from many invasions of the mainland.

(2) The wonderful power of assimilation which the ancient Greeks showed is still present. The Slavs who at one time overran the country and acquired considerable territory in the Peloponnesos, and the numerous waves of Albanians have been ultimately absorbed. The last great settlement of Albanians occurred as late as the end of the eighteenth century. The welding together of these partly Slavic Greeks with the strong, healthy Albanians was slow, but the community of religious faith and common danger proved in the long run a secure bond of union. The Albanians have given to Greece some of its most energetic leaders. Recent events have shown how strongly these two elements are now united into one nation.

The Valachians who form the third element in the population of Greece lead mostly the life of nomadic shepherds on the Olympus, in the district of Agrapha and in Acarnia. They are of the same stock as the Roumanians and possess only a few settlements. Most of them have now given up their language which still shows traces of its Latin origin; the 1928 Census recorded only 20,000 persons speaking the Koutsovalach language. In 1928 there were in Greece about 63,000 Spanish-speaking Jews and 34,000 Armenians.

(3) Following the expansion of Greek trade and colonization which took place at the end of the eighteenth century the Greeks regained the leading position in commerce throughout the Mediterranean and the Balkans. The urge

for liberation and encouragement to progress, together with financial assistance, actually came from this exterior Greece and for many years the Greek Colonies of Constantinople and Alexandria were more important in wealth and population than the little Kingdom created in 1830.

Independence was achieved at the cost of eight years of savage wars and the country limited to the North by the Gulfs of Arta and Volos contained more mountains than good land. In 1864 Great Britain ceded to Greece the Ionian Islands. Thessaly in 1881, Crete in 1898, Epirus, southern Macedonia and the Asiatic Islands (Lesbos, Chios, Samos) in 1913 were obtained from Turkey. In 1920 by the acquisition of Eastern Thrace and by the mandate on Smyrna and its hinterland, Greece was about to achieve the "Great Ideal" of union.

(4) Defeated by Turkey in 1923, Greece had to withdraw her frontier to the Maritsa River. The Treaty of Lausanne imposed the exchange of populations. All "Turkish subjects of orthodox religion" had to leave the country (except those of Constantinople) and "all Greek subjects of Moslem religion" except Albanians and Turks in Western Thrace. A similar exchange had been arranged with Bulgaria. In total, some 607,000 left Greece and, within a short space of time, huge crowds of refugees from Asia Minor, Bulgaria, and even Russia, including more women and children than men, moved into the country. By 1928 1,221,849 refugees entered the country, equivalent to 19.7 per cent of Greece's population.

Aided by the League of Nations the republican government settled the newcomers in villages prepared in advance. They were distributed in the provinces according to available lands, but unfortunately the acreage allowed to each family was too small (7 to 10 acres). Although too many of the refugees

crowded dangerously the suburban areas of the larger towns, others have brought with them new trades and experience in agriculture and industry (wine growing, raisin drying, silk culture, rug making). They have contributed to the modernization of Greek economy.

The exchange has freed Greece from the less assimilable elements - the Turks and the Bulgarophile Macedonians. At present Greece has a remarkably homogeneous population in spite of the diversity of its ethnic origin and, though profound differences in the degree of development are bound to subsist for a long time between the various provinces, they will not lead to divergencies such as are found in other countries of the new Europe.

* * * * *

The Republic was established by the plebiscite of April 13, 1924.. On November 3, 1935, the people voted for the restoration of the monarchy, and King George II returned to Greece.

The Constitution of 1911 was reestablished by General Kondylis on October 11, 1925. On August 4, 1936, fearing a communist rising, the Government suspended certain articles of the Constitution and set up a dictatorship under General Metaxas.

On October 28, 1940, Italy sent an ultimatum to Greece demanding complete capitulation. By March, 1941, not only had the Greeks driven the Italians beyond the frontier, but Greek forces were in occupation of one-quarter of Albania. But on April 6, 1941, Germany launched an attack on Greece, came to the assistance of the Italians in Albania, and forced the capitulation of the Greek Army on April 20, and conquered Greece by April 27, 1941, when German troops

entered Athens.

A "puppet" government was set up on April 30 under General Tsokoglu.

POPULATION

The total area of the country is 50,147 square miles, of which the mainland accounts for 41,328 square miles and the islands for 8,819 square miles. According to the Census of 1928, the population of the country was 6,204,684, of which 3,076,235 were males and 3,128,449 females. The urban population was shown as 33 per cent and the rural as 67 per cent. On December 31, 1938, the population was estimated at 7,108,814; its distribution by geographical divisions and by departments is shown in Appendix 1. At the end of 1930 the population was estimated at 7,201,000. The population of the three main cities (1938) was as follows: Athens 497,000, Piraeus 286,000, and Thessaloniki 267,000. The average density of population (which gives little indication of the density of settlement, as only 15 per cent of the land is arable) was in 1938, 140 per square mile, ranging from 460 in Corfu and 446 in Attica and Boeotia and 135 in Crete, to less than 85 in the mountainous departments of Kozane, Yanina, and Aetolia and Acarnia, and to only 59 per square mile in the malarious plains of Chalcidice (Map 3).

The number of inhabitants per square mile of cultivated land in 1931 was 870 as compared with 469 for Yugoslavia (1930), 366 for Bulgaria (1927), and 332 for Roumania (1931). However, the standard of living in Greece is generally high for the Balkans due to the existence of coastal industries and shipping, the cultivation of intensive export crops of tobacco and currants, and the relatively high efficiency of workers.

AGRICULTURE

Greece is mainly an agricultural country. Of the total area only one-fifth is cultivable. The total area under cultivation in 1938 was 6,028,882 acres. Forest area is 5,944,059 acres of which 70 per cent is state owned. By the draining of Lake Copais (Attica and Boeotia) an area of about 53,000 acres has been acquired for agricultural purposes. In 1928 61.1 per cent of the population was engaged in agriculture and fishing and 22.5 per cent in industry, mining and transportation. The greatest part (61 per cent) of the cultivated area is devoted to cereals of which, however, the production is far from sufficient for the consumption of the country. Considerable acreage is also taken up by olive trees and vines, and by the two valuable products, tobacco and currants. In 1940 the yield in metric tons was as follows: tobacco 48,900, wheat 896,000, currants 121,775, raisins 23,000, and olives 24,000. The production of olive oil in 1938 was 102,805 metric tons. Rice is cultivated in Voden near Thessaloniki. Figs, oranges, lemons and other fruits are plentiful. The Mediterranean climate of Greece is comparable to that of coastal California.

INDUSTRY AND MINERAL PRODUCTION

In 1938 the principal mineral output of Greece was (in thousand of metric tons): iron ore and pyrites 592, lead 15, magnesite 168, chromite 42, emery of Naxos 3, and lignites 108.

In industry, in order of importance, the first place is occupied by the manufacture of alimentary products, olive oil, wine, spirits, flour, and confectionery. Next in order are cotton, wool, silk and jute, etc., and the rug industry introduced by refugees from Turkey.

COMMUNICATION, NAVIGATION, SHIPPING, AND COMMERCE

There are 8,440 miles of roads in Greece of which 7,064 are improved earth, gravel, and water-bound macadam and 1,191 of surface-treated and penetration macadam.

Railways open for traffic total a length of 1,668 miles (see Map 1) of which 823 are operated by the State. The railway system is linked with those of Europe via Thessaloniki-Nish-Belgrade.

Before the war there was an air service run by a Greek company which connects Athens with Drama via Thessaloniki, and Athens and Yanina via Agrinion. In 1938 7,395 passengers were carried and 230,800 kilogrammes of freight. A number of foreign air companies also operated services in Greece.

The merchant Navy of Greece on June 20, 1938, had 589 steamers and motor ships of 1,812,723 tons, and 710 sailing vessels of 55,417 tons. In 1928 2,993 vessels (5,475,764 tons) entered Greek ports.

The principal articles of export are tobacco, currants, olive oil, and wine. Cereals take the first place among imports, followed by textiles, coal, and sugar.

FINANCE

Taxation is heavy and consumption duties form the mainstay of revenue in contrast with the yield from direct taxes which is relatively small. The public debt charge absorbs about one-third of the total.

The estimates for 1939-1940 show, in millions of drachmai (in 1939 the drachma = 0.8 cent), a revenue of 14,015 and an expenditure of 14,654. The total public debt in Greece amounted on December 31, 1938, to 52,142 millions

of drachmai. The public debt is partly under the control of an International Financial Commission. To this Commission were assigned, for payment of the interest of the external debt, the revenue from certain government monopolies, the stamp duty, and the import duties at the port of Piraeus. The total income from these sources was in 1939, 4,909 millions drachmai. In 1935-1936 of the total expenditure of 11,165 millions drachmai, 733 millions were spent by the Ministry of Health and Public Assistance.

RELIGION

The majority of the population are adherents of the Greek Orthodox Church which is the religion of State according to the Constitution. Of a total population of 6,204,684 the 1928 Census recorded 126,017 Mussulmans, 72,791 Jews, 35,182 Catholics, and 9,003 Protestants.

The government of the Orthodox Church is at present vested in a permanent council (Holy Synod) consisting of the Metropolitan of Athens and 12 metropolitans, who must, during their year of office, reside at Athens.

VITAL STATISTICS

The birth rate in Greece was 29.5 per 1,000 population from 1931 to 1935 as compared with 29.3 in Bulgaria, 31.8 in Yugoslavia, and 32.8 in Roumania; the rate decreased to 25.9 in 1938 and 23.5 in 1939.

According to official statistics, infant mortality was considerably lower in Greece than in the other Balkan States, amounting from 1931 to 1935 to 122 per 1,000 births as against 147 in Bulgaria, 182 in Roumania, and 153 in Yugoslavia. During recent years infant mortality has decreased in Greece from 134 in 1931 to 121 in 1937 and 99 in 1938. In 1938 the highest rates were

reported in Thrace (118) and Macedonia (106) and in the Peloponnesos (110); in the towns (where reporting is likely to be more accurate) the rates were 116 in Piraeus, 83 in Thessaloniki, and 73 per 1,000 births in Athens. In 1936 the main causes of death under one year of age in Greece were: diarrhea and enteritis, 25.0 per cent; pneumonia, 15.1 per cent; congenital debility, 10.0 per cent; and malaria, 5.6 per cent. The deaths due to ill-specified or undefined causes represented 12.6 per cent of the total deaths under one year of age.

The general death rate was 13.0 per 1,000 population in 1939 and 13.3 in 1938, as against an annual average of 16.6 for the period 1921 to 1935. The death rate (1938) is highest in Thrace (15.3) and in Epirus (14.7) and lowest in Crete (11.8) and in the Aegean (11.8) and Cyclades (10.9) Islands. In Athens, however, the death rate is considerably higher than the average for the country, reaching over 18 per 1,000 population in 1936, 1937, and 1938. This is partly due to better registration of deaths.

The natural increase is fairly high in Greece and amounted in 1938 to 12.6 per 1,000 population.

The main causes of death in 1938 per 1,000 deaths from all causes (and per 100,000 population) were as follows: pneumonia, 150.7 (200.1 per 100,000 population); tuberculosis of the respiratory system, 70.3 (93.4); diarrhea and enteritis under two years of age, 52.8 (70.1); influenza, 36.1 (47.9); malaria, 30.1 (40.0); dysentery, 14.8 (19.7); and typhoid and paratyphoid fevers, 11.4 (15.2). Acute and chronic nephritis accounted for 41.4 (55) and senility, 98.7 per 1,000 deaths from all causes (131.1 per 100,000 population). The number of deaths from ill-defined or unspecified causes was 73.8 per 1,000 deaths from all causes, reaching 97 in rural areas and 31 in the towns.

ORGANIZATION OF PUBLIC HEALTH AND PUBLIC ASSISTANCE

In Greece public health and assistance questions come under the Ministry of Health and Public Assistance which is divided into three departments:

(1) General Health Department - dealing with the prevention of diseases, maternal and child welfare, medical assistance to the poor, and supervision of the medical profession and hospitals.

(2) Department of Public Assistance - dealing with the protection of abandoned children, orphans, and the poor, public institutions, and philanthropic organizations, and pensions and assistance to war victims.

(3) Department of Public Relief - dealing with unemployment, housing accommodations for the poorer classes, and the care of refugees.

The Minister is advised in health matters by a Conseil supérieur d'Hygiène.

The medical assistance to the poor comes under the General Health Department, and a recent law (September 30, 1938) provides for local and regional committees responsible for designation of indigents entitled to free treatment. This medical assistance under the Social Insurance Act is administered by the Social Insurance Institute (connected with the Ministry of Labour) in collaboration with the General Health Department. The School Medical Service comes under the Ministry of Education.

Public Health Administration

In 1929 the Greek Government asked for assistance from the League of Nations in the reorganization of the national health services. Their representative in Geneva said:

"From the public health point of view especially, the Greek Government has met with great difficulties during the last fifteen years. Between 1912 and 1922, a period of continuous military effort, the principal work of the Greek

health authorities was the preservation of the Army and the civilian population from the fierce epidemics raging on the Greek frontiers. Later, the unprecedented influx of refugees imposed a new and arduous task upon the Greek health authorities. The groups of refugees, entirely destitute, constituted numerous potential foci for epidemic outbreaks, and if fresh ravages of disease have not occurred amongst the long-suffering populations this does credit to the Greek health service assisted by the League of Nations and certain foreign organizations.

"It will be readily understood that in the face of such situations the Greek Government has had no opportunity of preparing a general plan for the health organization of the country. It was only after the political and economical stabilization that the present government was able to form a health policy which it has already commenced to put into effect."*

The League sent a group of experts to Greece and after a preliminary study recommended a provisional health administration in a few Departments of Greece, the intention being to widen the authority of this administration so that in the end it would comprise the whole of the country. More than anything it was necessary to train health personnel, and the School of Hygiene in Athens was established and played a prominent part in the reorganization. The reorganization of the Central Health Department in 1939 has completed the scheme initiated in 1930.

Health experts from many countries took part in the work of reorganizing the Greek health services, hospitals, and nursing activities. An important part was played by the Rockefeller Foundation.

*Fifty-third Session of the Council, 4th Meeting. Reorganization of Public Health in Greece. Official Journal, June, 1929, p. 32.

Central Organization. The organization of the central health service is based on Law No. 1618 of February 14, 1939 (Journal Officiel No. 63) and the decree of May 20, 1939 (Journal Officiel No. 217).*

The central health service comes under a Ministry of Health and Public Assistance with a responsible Minister. The General Health Department of the Ministry is responsible for the administration of all central and local health services. Its Director-General is responsible to the Minister. The General Health Department is divided in the following way:

- A. Department of Public Health
- B. Department of Social Hygiene
- C. Department of Institutions and Personnel
- D. Division for the Medical and Pharmaceutical Professions
- E. State Quinine Service
- F. Economic Service
- G. Venereal Disease Inspection
- H. Trachoma Campaign Inspection
- I. Inspection of Pharmacies

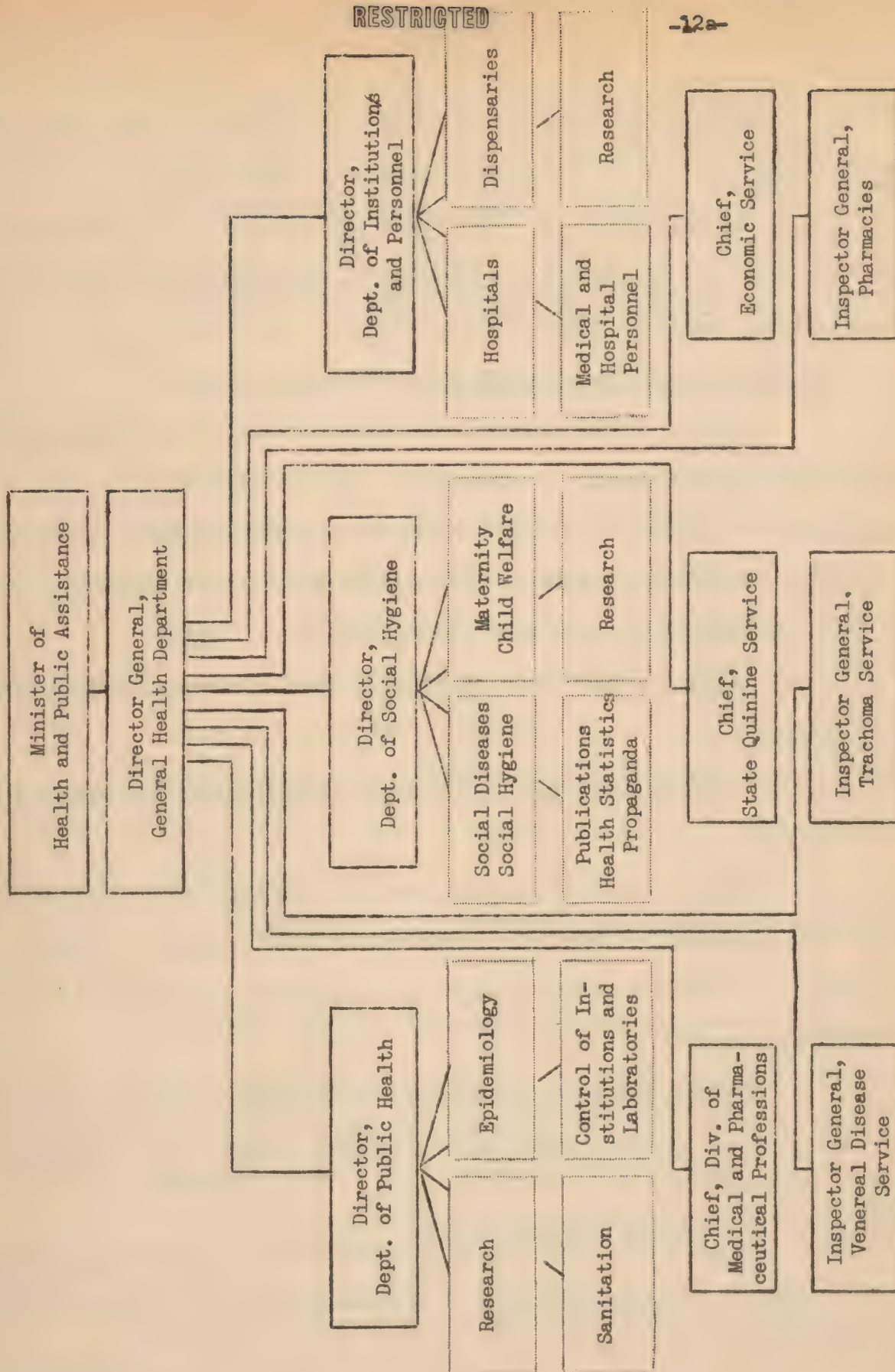
A. The Department of Public Health is divided into four sections:

- 1. Section of Epidemiology
- 2. Section of Sanitation
- 3. Section for Control of Institutions and Laboratories
- 4. Section for Research

1. The work of the Section of Epidemiology is carried out by three bureaus:

Bureau 1 deals with the contagious diseases and compiles a bulletin reporting the movements of epidemics. It can take any step needed in the prevention of contagious disease and issues the obligatory health certificates to members of certain professions. It inspects industrial establishments.

* See: Archives d'Hygiene, Third Year, 1939, pp. 337-345.



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Bureau 2 is in charge of quarantine services by land, sea, and air, and of the application of international sanitary legislation.

Bureau 3 supervises food inspection and takes, in collaboration with the veterinary service of the Ministry of Agriculture, the necessary steps to prevent the spread of animal disease to man.

2. The Section of Sanitation has three bureaus:

Bureau 1 deals with general sanitation in towns, townships, villages, and rural districts. It studies the needs for safe water supplies and sewage disposal systems; supervises the sanitation of graveyards and controls all work of the sanitary engineers in the municipalities and communes.

Bureau 2 controls anti-malarial work.

Bureau 3 prepares the sanitary by-laws in connection with infectious diseases.

3. The Section for Control of Institutions and Laboratories has three bureaus:

Bureau 1 controls and supervises the municipal and communal health services and gives directions in all problems of public health. It keeps these services in touch with scientific progress and supervises the instruction of the health personnel.

Bureau 2 organizes and supervises the services needed in the control of infectious diseases (disinfection stations, diagnostic laboratories, etc.).

Bureau 3 establishes general public health laboratories responsible for the making of biological products. It controls all such and supervises private laboratories.

4. The Section for Research studies foreign legislation in the field of public health and follows the work of international congresses.

B. The Department of Social Hygiene is divided into four sections:

1. Social Diseases and Social Hygiene
2. Maternity and Child Welfare and Eugenics
3. Publications, Health Statistics, and Propaganda
4. Research

1. The section for Social Diseases and Social Hygiene has three bureaus:

Bureau 1 deals with tuberculosis, venereal diseases, cancer, alcoholism, and drug addiction. It studies the causes of mental disease and controls the work of the local health services in these fields.

Bureau 2 supervises the technical and scientific work of all institutions dealing with social diseases (for instance, mental hospitals), and indicates the need for specialized dispensaries.

Bureau 3 supervises public baths, collaborates with the Greek Red Cross in social hygiene and with the Civilian Defense Authority in the protection of the civilian population.

2. The Maternity and Child Welfare and Eugenics section has two bureaus:

Bureau 1 studies and supervises preventive measures in all institutions dealing with maternity and the child to school age; supervises the work of visiting nurses, midwives, and pediatric nurses.

Bureau 2 studies eugenic and mental hygiene measures.

3. The section for Publications, Health Statistics, and Propaganda has four bureaus:

Bureau 1 studies vital and health statistics and publishes a bulletin giving morbidity data.

Bureau 2 collects and edits the monthly and annual reports received by the Central Health Department from the different divisions and prepares the annual report for the Ministry.

Bureau 3 publishes the Archives of Hygiene, codifies the sanitary laws, and is in charge of the library and all translation for the Central Health Department.

Bureau 4 is in charge of all health propaganda and organizes the hygiene exhibitions.

4. The section for Research studies housing, nutrition, and foreign work in these fields.

C. The Department of Institutions and Personnel has four sections:

1. Hospitals
2. Dispensaries
3. Medical and Hospital Personnel
4. Research

1. The Hospital section has four bureaus:

Bureau 1 is responsible for the establishing of public hospitals and supervises their functioning from a technical and scientific point of view. It is in charge of central stores. It instructs and guides the local services in all problems of hospitalization and medical assistance.

Bureau 2 deals with hospital equipment and studies the budget to ensure that the necessary means are available for effective service.

Bureau 3 sees that the indigent sick get hospital treatment and supervises medical assistance for the indigent, and collaborates with the authorities in charge of social insurance.

Bureau 4 supervises all private clinics and dispensaries.

2. The Dispensary section has two bureaus:

Bureau 1 is in charge of dispensary care of the indigent and of

the creation of the necessary dispensaries in municipalities and rural districts.

Bureau 2 controls all medical care given by municipalities, communes, or large industrial organizations, either as dispensary or as home service. It also sets up first-aid stations.

3. The Medical and Hospital Personnel section has two bureaus:

Bureau 1 is in charge of the training of hospital personnel (schools for nurses, public health nurses, midwives, masseurs, etc.).

Bureau 2 supervises the conditions of employment of the scientific personnel and, together with the Ministry of Education, organizes postgraduate medical training.

4. The Research section studies the hospital problems in foreign countries and collects data on foreign legislation in this field.

D. The Division for the Medical and Pharmaceutical Professions has five bureaus:

Bureau 1 is in charge of medical licensure. It controls specialization and keeps records of practitioners and specialists entitled to practice in Greece. It also controls fees and supervises medical professional associations.

Bureau 2 controls licenses for the establishment of pharmacies and supervises the pharmaceutical associations.

Bureau 3 enforces the regulations governing pharmacopoeias and supervises the sale of all drugs in collaboration with the Pharmaceutical Inspection Service.

Bureau 4 controls all import and use of narcotics and for this purpose keeps in touch with the authorities of the League of Nations (now in Washington).

Bureau 5 studies foreign work and regulations in the fields concerning the section and keeps the local services informed of measures taken by the Central Health Department.

E. The State Quinine Service administers through its four bureaus the State monopoly of quinine (and some narcotics coming under the monopoly). It investigates the requirements for quinine for anti-malarial work, supervises its preparation, and issues the necessary scientific and economical reports.

F. The Economic Service has four bureaus dealing with the budgets of the central health service, the hospital and dispensary services, and the money spent for local programs. This service is in intimate contact with the Ministry of Finance.

G. The Venereal Disease Inspection service supervises all services (municipal and communal, or private) dealing with venereal diseases and leprosy. It inspects regularly the work of the local health centers in this field and assists the chiefs of these centers and the police in case finding.

H. The Trachoma Campaign Inspection supervises the work throughout the country and assists in case finding.

I. The Inspection of Pharmacies supervises all pharmacies, whether state, municipal, communal, or private. In this work it collaborates intimately with the chiefs of the local health centers. It controls, together with the Division for the Medical and Pharmaceutical Professions, the application of the rules of the Greek pharmacopoeia.

Comment. It is evident that the law provides for a somewhat ambitious scheme of health organization for such a small country as Greece. It should not be thought that the duties laid upon the different bureaus by law are effectively carried out in every instance. There can be no doubt of the great improvement brought about in the Greek central health services by the cooperation

of the League of Nations, but when this cooperation ended in 1934 there still remained much to be done.

Local Health Administration. A health center (Departmental Health Organization) is established in each prefecture and in the Port of Piraeus. The centers are divided into grades A and B. The statutory staff of the grade A centers consists of a medical hygienist (a physician with public health training), a deputy, three practitioners, four visiting nurses, and three sanitary inspectors. The B centers have only one hygienist and two sanitary inspectors. There are seven grade A and thirty-two grade B health centers. Altogether there are forty-three medical hygienists, twenty-four practitioners, about ten visiting nurses, and ninety-five sanitary inspectors working in these centers.

The municipalities are required by law to appoint a health officer. In cases where the health officer appointed does not possess adequate training in public health, the municipality is required to send him to the School of Hygiene for a special course. Seventy municipalities have gradually conformed to these requirements. Communes with an annual budget of over 400,000 drachmai are also obliged to appoint health officers under the same conditions. Of 5,578 communities, only 66 are in a position to provide the necessary funds for this purpose. The remaining communes make use of the services of local practitioners and pay only small fees. Many communes have no form of medical assistance.

(The information with regard to local health administration is as of 1937.)

Athens School of Hygiene and Athens Health Center

The reorganization of the Greek Health Service, as recommended by the League of Nations' Commission, provided for a health center in Athens and a school

for training the necessary personnel; these were to constitute the nucleus of the future health service. Accordingly, the Athens Health Center and School of Hygiene, created by law in 1929, was: (a) to direct the public health work in six selected areas; (b) to train the necessary personnel for the new health services; and (c) to act in an advisory capacity to the Central Health Administration in all matters regarding public health. This institution was placed directly under the Ministry of Health and began its work in 1931. Foreign experts were called in to direct the Athens Center and The Divisions of Malariology and Sanitary Engineering of the School.

Owing to the difficulty of adapting the old health organization to the new system (and also to the economic depression), the program was only partly carried out. Four departments were selected for the establishment of new public health centers, but these centers were closed down two years later. In 1934 all of the departmental health bureaus were replaced by public health centers, and medical officers in charge were required to hold a diploma in hygiene. The direct supervision of public health work by the Athens Center and School (except for malaria control) was brought to an end and taken over by the local authorities.

In 1935 a model health center for practical training of students of the School of Hygiene was organized at Ambelokipi near Athens.

Public health diplomas are required by law by newly-appointed health officers, and municipalities must give preference to graduates in public health when making appointments in their health services. Further, Army doctors were required to attend a postgraduate course at the school.

(a) The School of Hygiene: In 1937 the school had nine divisions: (1) Microbiology and Serology (Dr. Papamarku); (2) Epidemiology and Statistics (Dr. G. Alvizatos); (3) Public Health (Dr. Kyriazides); (4) Malariology and

Tropical Diseases (Dr. G. Livadas; Dr. Balfour, Technical Adviser); (5) Social Hygiene (Dr. Papacostas); (6) Sanitary Engineering (Chr. Floras, Engineer); (7) Biochemistry and Nutrition Hygiene (Dr. Galanos, Professor of Food Hygiene, University of Athens); (8) School Hygiene (Dr. Lampadarios); and (9) Meteorology and Climatology in Relation to Public Health (M. Mariolopoulos).

Important work was carried out by the Divisions of Malariology and Sanitary Engineering. The Sanitary Engineering Division acted as an advisory department to the Ministry, the prefectures and the municipalities; it carried out in various regions a program including model latrines, wells, sewers, and piped water supplies. The Division of Malariology directed and supervised all the Ministry's anti-malaria work. The course covered two semesters, including eight weeks of field work (malariology, health survey, Ambelokipi Health Center, and public health). From 1932 to 1936 there were 86 graduates in public health, of which 62 were employed by the Ministry of Health, 10 by the Army and Navy, 4 by the Ministry of Education, and 4 by a municipality; 70 students also graduated as sanitary engineers.

(b) The Ambelokipi Health Center: This center was organized in 1935 for the practical training of the students of the School and of recognized nursing schools and to serve as a model local health service. An agreement was made between the School, the City of Athens, and the Rockefeller Foundation for the maintenance of the Center for five years. The Center was to provide complete public health service for a part of the City. The program of the Center included prenatal work, maternity, child welfare, school hygiene, dentistry, control of communicable diseases (including tuberculosis and syphilis), sanitation, statistics, health education, and propaganda.

The Budget

The budget of the Ministry of Health and Public Assistance for 1935-1936 amounted to 733.2 million drachmai, of which 4.01 millions were spent for the Athens School of Hygiene, 11.02 for district health services, 10.28 for the control of infectious diseases, 10.9 for malaria control, 1.17 for the control of trachoma, 38.11 for the campaign against tuberculosis, 9.14 for the control of venereal diseases, 1.63 for maternal and child welfare, and 27.57 million drachmai for medical assistance.

MEDICAL INSTITUTIONS

Hospitals. In the country as a whole, 105 hospitals with 12,642 beds were in operation in 1938 (see Appendix 2 and Map 8). Of these -

- 40 (6,269 beds) belonged to the State
- 25 (2,611 beds) belonged to the municipalities
- 25 (3,025 beds) belonged to philanthropic societies
- 3 (291 beds) belonged to the National University
- 1 (60 beds) belonged to foreign philanthropic associations
- 8 (199 beds) belonged to social insurance companies
- 3 (187 beds) belonged to religious minorities

These hospitals were divided into:

- 71 general hospitals (5,833 beds)
- 3 general hospitals for children (565 beds)
- 9 mental hospitals (3,975 beds)
- 6 hospitals for venereal diseases (598 beds)
- 6 hospitals for infectious diseases and leprosy (773 beds)
- 6 maternity hospitals (494 beds)
- 2 ophthalmological clinics (59 beds)
- 2 hospitals for chronic diseases (345 beds)

Tuberculosis Sanatoria and Hospitals. In 1939 there were 12 sanatoria and tuberculosis hospitals with 3,380 beds. Of these, 7 belonged to the State (2,635 beds) and 5 to philanthropic societies (745 beds) (see Appendix 4 and Map 4).

Special Health Institutions. Hygienic and bacteriological laboratories at Athens and Thessaloniki, the Pasteur Institute at Athens, the Pathological and

Anatomical Center of the Ministry of Health, disinfecting stations at Athens, Thessaloniki, Corfu, and Samos, and an anti-rabies vaccination laboratory with a hospital at Athens.

MEDICAL PERSONNEL

Physicians. With regard to the distribution of physicians in the different departments, the following is available (1937-1939):

Arta: (Population 62,462), 24 physicians (2 surgeons and 2 gynecologists), 1 per 2,602 population.

Canea: (Population 126,654), 86 physicians, 1 per 1,472 population.

Corinth: 139 physicians.

Laconia: (Population 148,499), 125 physicians, 1 per 1,187 population.

Lesbos: (Population 177,214), 106 physicians, 1 per 1,623 population.

Messenia: (Population 297,191), 251 physicians, 1 per 1,184 population.

Thessaloniki: (Population 539,679), 685 physicians, 1 per 788 population.

Zante: (Population 44,750), 46 physicians, 1 per 973 population.

According to the 1928 Census there were 5,904 physicians in Greece which, calculated on a total population of 6,204,684, would give one physician per 1,058 persons. Denmark at the same time had one physician per 1,224 inhabitants. Of the 6,500 physicians in 1938, 1,800 resided in Athens-Piraeus, with a population of about 800,000.

Nurses and Public Health Nurses. Law No. 6113, 1937 (Journal Officiel No. 525) established a School of Nursing in Athens. This school, which is under the supervision of the Ministry of Health and the scientific direction of the Athens School of Hygiene, gives a diploma in nursing and public health nursing. It was provided with 2,100,000 drachmai for the first year, 2,500,000 for the second, and 3,000,000 for the following years. In 1938 there were 35 students

at the school.

Midwives. In 1938, 2,811 midwives were practicing in the country. Seven hundred and two of these had graduated from an official course, while 454 had received some training. The remainder (1,655) had no training whatever. Of the graduated midwives, 215 were in Attica and Boeotia.

SOCIAL INSURANCE

After preliminary technical studies made with the assistance of the International Labour Office, a Social Insurance Act was adopted in 1932 to provide a scheme of compulsory insurance against industrial accidents, occupational diseases, sickness, maternity, invalidity, old age, and death, for persons employed in industry and commerce. In 1933, however, the new government drafted another Bill providing for the elimination of certain benefits and an important reduction in the resources of compulsory insurance. The revised Act was promulgated on October 10, 1934, and covered the risks of sickness, maternity, accidents, invalidity, old age, and death. The scheme was finally put into operation in the three main centers (Athens, Piraeus, and Thessaloniki) in 1938 under General Metaxas, who received full credit for the initiation of social insurance in Greece.

The medical services of the sickness insurance scheme came into operation in Athens and Piraeus on December 1, 1937, and in Thessaloniki on January 1, 1938. At the end of 1938 the number of insured persons in these three towns was 300,000. Medical assistance is allowed in full to insured persons and to members of their families. In order to provide medical service the Social Insurance Institute has established a network of dispensaries with complete medical equipment where insured out-patients are attended by doctors engaged on an hourly basis; other insured persons are treated by practitioners bound to the

Institute by contracts specifying the rates for different services rendered. The Institute has also reserved for its own use a number of beds in the appropriate establishments. The expenditure occasioned by benefits in kind (drugs, etc.) is borne in principal by the Institute, insured persons having to pay a small share only.

In view of the satisfactory results obtained during the initial period of the compulsory insurance, the government was planning in 1939 to establish branches of the Social Insurance Institute at Volo, Patras, Calamata, Verria, Edessa, and Macoussa.

In the beginning the Act was applied to certain categories of wage-earners and workers. In 1939 the protection was extended to new categories of workers when a number of occupational funds were established, such as those for workers in tobacco shops, brokers, the staff of the Greek Telephone Company, the Piraeus Dockers, the employees or workers of wine manufacturing, brewing, and alcohol-distilling firms, oil salesmen, the staff of cement works, etc. In addition, an autonomous compulsory insurance fund was organized to cover traders against the risk of invalidity, old age, and death.

The development in sickness insurance had an important effect on the medical equipment of the country. According to an Order (1939) the funds of the invalidity and old-age insurance scheme may be invested in the building of dispensaries, hospitals, asylums, etc.

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CONTROL AND PREVENTION OF ACUTE AND CHRONIC DISEASES

CHRONIC DISEASES

Tuberculosis

Tuberculosis is, together with malaria and the enteric diseases, the most important cause of death in Greece. No significant figures are available on morbidity, as neither hospital nor dispensary services have been developed to an extent permitting the use of such figures.

Mortality. The general mortality from all causes which, in 1860 was about 20 per 1,000, was about 15 per 1,000 in 1915, and 13 in 1939. Of 100 deaths from all causes, 35 are (1937) due to infant mortality, tuberculosis (all forms), and malaria, in that order of importance. It is probable that tuberculosis reached its maximum in Greece in the beginning of this century with a mortality of about 50 per 10,000 inhabitants. The mortality from all forms was in 1938 11.06 per 10,000, and for pulmonary tuberculosis 9.3 per 10,000.

All deaths are reported to the civil administration, which must advise the local health authorities within twenty-four hours, enabling them to verify a supposed death from tuberculosis. There is some reason to believe that mortality figures from tuberculosis give a fairly good picture of the importance of the disease although, obviously, the figures represent a minimum. Figures are given for tuberculosis mortality by departments for 1937 (Appendix 3). Although no doubt some departments like Cavalla, Drama, and Rhodope have special problems of density, due to the influx of refugees and to recent industrialization, the distribution of the proportion of deaths due to tuberculosis, to the total deaths, as seen from Map 5, is greatly influenced by the location of institutions for treatment, a factor of great importance in Attica and Boeotia.

The tuberculosis death rates in urban areas of Greece are more than twice those for the rural districts. Athens has the highest tuberculosis mortality among the large European towns reaching, for tuberculosis of the respiratory system, an annual rate (1936-1938) of 35 per 10,000 population, as compared with the next highest rate of 32 per 10,000 in Lisbon and 11 to 14 per 10,000 in Thessaloniki.

Factors of Special Importance. In Greece the tuberculous person is the all-important factor in the spread of the disease. Tuberculosis of bovine origin is comparatively rare, due to the general habit of boiling all milk before consumption. However, certain milk products, such as butter and cheese, are far from safe.

*The main contributing factors to tuberculosis in Greece are the poor general state of nutrition in the population; the inadequate housing conditions, which are of particular importance due to the climate; and the general lack of personal hygiene. Malaria is an important contributing factor, as well as alcoholism, particularly in rural districts.// The industrial development in certain regions has brought new problems, which have as yet received little attention.

Organization. Early (1901) attempts to deal with tuberculosis on a larger scale were made by the "Panhellenic League Against Tuberculosis," which built the first hospital for tuberculosis. Two other associations also deal with the problem - the Anti-Tuberculosis Society and the Association to Aid the Indigent Tuberculous. A broad, country-wide organization, however, had to await the general reorganization of health administration which took place in 1929 and the following years, under the auspices of the League of Nations. The present organization is based on Law No. 1754, 1939 (Journal Officiel No. 209).

The Minister of Health and Public Assistance has full charge of tuberculosis work in all its phases. He has at his disposal a "Central Anti-Tuberculosis Committee," whose regular members are as follows: Director-General of Health, chairman; two of the three directors of departments of the General Health Department; the professor of social hygiene at the School of Hygiene; one of the professors of pediatrics; and the director of the Sotiria Sanatorium in Athens; other members of the Committee, such as officials working in related fields, can be called upon when needed.

The Committee acts as an advisory body to the Ministry in all problems dealing with tuberculosis, suggesting legislative and executive measures, advising on coordination of private and public institutions, reporting on suggestions submitted by the "Local Anti-Tuberculosis Committees," having to do with measures of propaganda, etc.

Local Organization. In each department the Health Center is in charge of the anti-tuberculosis program. It controls all tuberculosis establishments on behalf of the Ministry of Health. It receives daily information from these institutions of available bed space, and is responsible for the distribution of patients in need of treatment. A complete file of tuberculous patients is kept up to date in the Health Center. The Departmental Health Center has two advisory bodies: the communal health commissions which advise on all health problems, but take an active interest in tuberculosis, and a more specialized committee (corresponding to the "Central Anti-Tuberculosis Committee"), the "Local Anti-Tuberculosis Committee." One of the local specialists in tuberculosis, connected with the Health Center, sits on this Committee. The Committee meets once a month. It controls the work of the anti-tuberculosis establishments, advises on collaboration with private organizations, is in charge of the educational program, and makes suggestions to the Ministry of Health. The municipal or

communal physician is charged with the case finding and the application of the measures designated by the Center.

Tuberculosis Institutions. The institutions having beds for the tuberculous may be seen from Appendix 4. Pulmonary tuberculosis is cared for in tuberculosis hospitals, and in sections for the tuberculous in general hospitals and sanatoria, dealing with all cases except the most advanced. The tuberculosis hospital is the most important institution for the care of the tuberculous but, as it is very costly at present, it is necessary to depend to a large extent on the bed space set aside in general hospitals.

Limited facilities are available for surgical tuberculosis which, although less prevalent than pulmonary, is of great social importance due to the need for special orthopedic care and the prolonged invalidism.

With regard to convalescence, social insurance is not yet in a position to take over this problem. There are a number of small establishments in the mountains, but much is needed here. There are seven anti-tuberculosis dispensaries either working solely as such, or dealing with tuberculosis as part of the work of a polyclinic (see Map 4).

With regard to prevention, a number of summer colonies have been established in the mountains in some of the departments. There are a few open-air schools. The Army has taken special measures for the prevention of tuberculosis (tuberculin testing, monthly inspection, etc.).

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Malaria

Malaria has been for many years one of the foremost, if not the most important, of the health problems of the country. It has played a prominent role in the past, and its potential importance under present conditions deserves special attention.

The well-known difficulties of evaluation of the intensity and frequency of the disease apply especially to Greece, although malaria morbidity statistics are available since 1921. In spite of their limited value, these figures show considerable annual fluctuation and regional differences. Malaria mortality reached a high level in 1923 and 1924, in 1929 and in 1932, decreased during the following three years and rose to a moderate peak in 1936 with 5,181 deaths corresponding to 7.5 per 1,000 population. The rate fell to 4.8 in 1937 and to as low as 4.0 in 1938, a fact which probably accounts for the low general (13.3) and infant mortality (99 per 1,000 births) during that year. About 53 per cent of deaths ascribed to malaria from 1923 to 1934 were reported among children under 5 years of age. The malaria deaths accounted for 7.7 per cent of total deaths from all causes in 1923, for 6.0 per cent in 1932, and 4.9 per cent in 1936, and represented only 3 per cent of the total deaths in 1933 and 1938 (see Map 6). The seasonal peak of malaria mortality is reached (1929 to 1936) in August (17.3 per cent of the annual total), September (18.2), and October (15.4). In 1938 the malaria mortality rate was 5.17 per 1,000 population in rural areas and 1.49 in the towns; highest rates were recorded in Epirus (7.6), Thrace (6.7), and Macedonia (6.3), and the lowest (less than 1.5) in the islands. The available morbidity data indicate an almost universal distribution of the disease even before the influx of the refugees in 1923-1924.

Valuable data on malaria were obtained as a result of the country-wide

survey made in the winter of 1933-1934. The survey was among school children (aged 5 to 15) in 69 towns and villages with an aggregate population of 195,390. The localities were chosen to represent each major type of topographical region of the country. The general average spleen index for 8,184 examinations was 35.6 per cent, while the average blood index for 7,662 examinations was 17.4 per cent. Epirus had the highest spleen and blood rates (50 and 25 per cent) and the Ionian and Aegean Islands the lowest rates. The average rates for rural villages with less than 1,000 inhabitants were approximately double the rates in larger towns and cities. The localities situated above 250 meters altitude had in general a lower average spleen and blood rate than the communities situated below this altitude. With regard to the species of the parasites, the average for 1,330 positive bloods (among the 7,662 bloods examined) was P. vivax 34.5 per cent, P. falciparum 38 per cent, and P. malariae 26.5 per cent.

The important vectors in Greece are A. sacharovi (elutus), A. superpictus, and A. maculipennis (typicus). A. sacharovi and A. maculipennis usually reach their maximum density in June and July, while superpictus is most abundant in August and September. This fact explains the longer malaria wave and its extension later in the year in Greece than is the case in Italy and other European countries. According to dispensary data (1931 to 1933) the seasonal distribution of the species of plasmodia showed clearly that P. vivax predominated in spring and early summer, while P. falciparum was the most important species in connection with the extended autumnal wave.

Though the heavy malaria infection among Allied troops in Macedonia (1917) had attracted attention to the problem, and some work had been carried out by the Refugee Settlement Commission, anti-malaria work in Greece began in 1930 under the guidance of the Division of Malariology of the Athens School of

Hygiene. The Division under the direction of M. E. Balfour, with the assistance of the Rockefeller Foundation, studied the epidemiology and etiology of malaria and the biology of local Anophelines. By extensive experiments it demonstrated the value of several methods of prevention and trained the necessary technical personnel. The control and eradication projects carried out under the supervision of the Division of Malariology from 1931 to 1937 in 13 different areas, including the suburban areas of Athens and Thessaloniki, afforded permanent protection against malaria to about half a million persons.

A national program for malaria control and eradication in Greece was prepared in 1938 by Gr. Livadas, Director of the Malaria Division of the Athens School of Health, and was adopted by the Ministry. The program provides for a central organization based mainly on the technical guidance by the Athens School of Health, and regional organization based on the civil health centers and departmental malaria commissions. It also includes budgetary and legislative provisions.

Venereal Diseases

It is not possible to give exact figures for venereal diseases in Greece, although there can be no doubt that they constitute one of the most important public health problems. Serious work was not undertaken until 1910 when the hospital 'Andreas Syngros' (370 beds) was established as a special hospital for the treatment of venereal diseases. A large out-patient clinic is attached to this hospital, which serves as a teaching institution for medical students and gives postgraduate training for personnel to be used in the

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Interior. There are now in the whole of Greece six anti-venereal hospitals with a total of 598 beds (see Appendix 2). The departments have special anti-venereal out-patient clinics of which there were two in Athens in 1938. A number of traveling dispensaries were set up in 1930 for the diagnosis and treatment of congenital syphilis in Macedonia, Thrace, and Epirus. An inspection service at the Ministry of Health assists and controls the local health centers. Greece has regulated prostitution. Registered prostitutes are either at brothels or free. There were in 1933 between 14 and 20 brothels in Athens each with 5-10 inmates. Regulations are - at least on paper - very strict and detailed. The "free" prostitutes practice in temporary lodgings, which are carefully watched, no minor being allowed to live in the same house. Both the free prostitutes and those living in brothels must undergo medical examination twice weekly. The result must be certified by the physician, who is held responsible. In 2,379 examinations of registered prostitutes only 1 had syphilis and 57 gonorrhea, while in 18 clandestine prostitutes 5 were found to be syphilitic and 9 suffered from gonorrhea. In local health reports there is a steady complaint about the impossibility of controlling clandestine prostitution, so that the boast of the department of Zante that there are no brothels does not mean immunity from syphilis. Lymphogranuloma inguinal has been found in Athens, Piraeus, and Syra. In most cases the husband was infected by a prostitute and brought the disease to his wife. The high frequency in Syra was said to be due to the limited number of prostitutes.

Trachoma

Although no exact figures are available there can be no doubt that this disease constitutes a major problem, particularly among the poor and uneducated. At Canea, among the children in primary school, 60 per cent suffered from trachoma

while in the senior classes of high school the percentage was only 3.3. At Hagios Nikolaos (Crete) the rates were 30 per cent for primary school and 14 per cent for secondary school. As elsewhere, the social factors are of primary importance. It has been found that a trachomatous child has, if not a whole family suffering from the disease, generally a trachomatous mother. The school plays an insignificant part in the spread of the disease. The role of refugees in the spread of trachoma in 1923 is still disputed. While there can be no doubt that the disease was ripe among them, it has been argued that no interest had been taken in trachoma in Greece up to that time, although it was well known that the disease was common.

An extensive Trachoma Service has been set up under an Inspector-General within the General Health Department. In the Army the men suffering from trachoma are divided into those with corneal involvement and those without. The last group serve in special units, while the first group are excused from military service. It has been attempted to enforce examination in "trachoma sections" through special dispensaries and with fine or prison for failure to show up. The section was at the same time examined for congenital syphilis. How much success these attempts have met with is not stated. The Ministry of Health has been empowered to ask for premarital trachoma examination, but this does not seem generally to be done. A number of anti-trachoma clinics have been set up in the departments, either as specialized clinics or as part of the health center clinic. (In 1932 there were six in Athens and two in Piraeus.)

A number of special dispensaries have been set up in primary schools (1938), twelve in Athens, thirteen in Mesogea (southeast of Athens), and ten in Piraeus. The central health service in Athens controls the anti-trachoma work through a special inspection service, which assists the local health centers in case finding in kindergartens, infants' and children's homes, summer

camps, etc. Through this service the necessary technical personnel is to be made available locally.

Leprosy

Leprosy is one of the diseases connected with Greece from classical time. Although it is claimed that the disease described as leprosy in the hippocratic corpus was not leprosy, doubtless the intimate relation between Greece, Africa, and Asia, where the disease is known to have been prevalent at this time, brought it to Greece, and leprosy became established on the islands and in part of the coastal zone. The first survey (Ehlers) at the beginning of this century revealed about 1,000 cases on the Island of Crete. In the late twenties an attempt was made to trace all centers of leprosy and round up hidden cases, and 426 persons chiefly with nodular leprosy were isolated (see Map 7). It was estimated about 1930 that between 50-100 cases of nodular leprosy were still at large. The nodular form is said to be the most common, the mixed being second, while the macula-anaesthetic form is not so frequent. Obviously, the last form is most likely to avoid detection.

The number of new cases registered yearly is small (1936, 41; 1937, 31; and 1938, 23). Facilities for treatment have been made available at special hospitals, of which there are four with a total of 560 beds. The largest hospital (300 beds) is in Spinaloga in Crete.

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Leishmaniasis

Kala-azar is comparatively common in Greece where it has been reported from all departments with the exception of a wedge-shaped part in the North formed by Florina, Pella, Kozane, and Trikkala. It has been particularly well studied in Messenia where 800 cases were recognized in ten years up to 1927; 86 cases were reported in 1937 and 84 in 1939. The disease is chiefly found in the hillside villages, as for example around Kalamata. Argolis and Corinth reported 47 cases in 1939. A special service for the detection and treatment of cases was set up in Messenia in 1929.

Oriental Sore has been reported most frequently from Heraklion during the last ten years (70 cases in one village).

ACUTE INFECTIOUS DISEASES

Plague

The presence of plague was reported in the ports of Greece from 1913 to 1930. Over 700 cases, with 260 deaths, were reported during that period, all of which were of bubonic type, except for 17 cases of pneumonic plague in Syra. From 1927 to 1930 the presence of the disease was reported in Piraeus, Patras, Corfu, and Mytilene.

Cholera

Cholera visited Greece during the Balkan War (1913) when 5,200 cases, with 2,465 deaths, were reported in Macedonia and 112 cases (58 deaths) among Bulgarian prisoners in Old Greece, and again in 1916 in Corfu, where over 15,000 cases (5,000 deaths) occurred among Serbian troops who had retreated across Albania. A few cases have been found among refugees from Russia (1920) and were isolated at Thessaloniki and Piraeus.

Smallpox

Despite the fact that vaccination has been made compulsory, smallpox has more than once assumed epidemic character in Greece, mostly in the newly annexed provinces and among refugees. The epidemic reached its peak in 1923 when the total number of cases was 2,101 of which 683 were fatal. At present, smallpox is extremely rare in Greece with only one or two cases reported yearly. A decree of 1937 requires vaccination of infants between the 15th of October and the end of November in each year, except in the mountainous districts and in very unfavorable weather, when vaccination may be postponed until the following April. Lists of infants born during the previous twelve months must be drawn up by the local authorities and children must be brought to the local dispensary or to the parish church of the area at a time announced by the local authority. They must be brought for the verification of results in a similar manner. There are no provisions for exemptions, except for those certified as having been vaccinated by private doctors. School children must produce a certificate of revaccination at the age of eight. They will be revaccinated by the school medical officer or the public vaccinator of the locality. Other methods for securing vaccination and revaccination of the adult have been taken.

Exanthematic Typhus and Typhus-Like Diseases

The classical louse-borne typhus is known to exist in Greece, but its prevalence has rarely, in the past, assumed epidemic proportion.

The first epidemic outbreak was recorded in 1913 at Thessaloniki. In 1915 and 1916 small outbreaks were reported in the Peloponnesos and at Cavalla and Corfu. During the great epidemic in Serbia (1914-1915) the disease did not assume an epidemic character in Greek Macedonia. The sporadic cases in this area were mostly discovered among persons from Serbia. In 1917-1918 serious

epidemics, however, were reported in the Epirus and in the Island of Mytilene, and the disease spread again in Greek Macedonia. A total of about 1,400 cases was reported in Macedonia (1918-1919) with a case-fatality of 15 per cent. In 1920 the Greek refugees from Russia brought the disease to Thessaloniki where sporadic cases were reported among the local population early in 1921.

Less than 100 cases reported each year (1925-1939) as exanthematic typhus were scattered in various departments of Macedonia and Thrace, but were more frequent in the towns of Drama, Thessaloniki, and Athens. A few cases reported at Thessaloniki in 1937 were described by the local medical officer as Brill's disease.

Characteristic cases of the sporadic murine flea-borne typhus were described in 1933, and the presence of virus in the rats was shown in Piraeus and Athens.

The tick-borne (R. sanguineus) "boutonneuse" fever has been observed in Athens, Piraeus, and Volo, and further to the north in the departments of Rhodope and Drama, and also in the Cyclades. Twenty to 30 cases were reported each year from 1936 to 1939.

Relapsing Fever

Both louse- and tick-borne forms of relapsing fever have been recognized in Greece, but only a few single cases are reported each year.

Typhoid and Paratyphoid Fevers

Typhoid and paratyphoid fevers are important causes of morbidity, especially in rural areas. While some improvements in water supply were made in recent years in the larger cities, the problem of water supply and sewage disposal remains acute in the smaller towns, in suburban areas, and in the villages.

During a recent epidemic (1937) in Athens, the majority of cases were traced to rural districts and most of the cases occurred among young people, apparently of premilitary age. Vaccination is practiced throughout the country, mostly in connection with local outbreaks.

In 1938 the total deaths ascribed to typhoid and paratyphoid fevers represented 11.4 per 1,000 deaths from all causes, and a rate of about 15 per 100,000 population. Recent typhoid mortality rates (per 100,000) in the three main cities were as follows:

	<u>1935</u>	<u>1936</u>	<u>1937</u>	<u>1938</u>
Athens	16.8	13.9	18.5	9.7
Piraeus	12.3	11.4	17.3	10.5
Thessaloniki	16.2	19.1	13.6	13.5

Dysentery

Bacillary dysentery is endemic in Greece. It comes next to typhoid in importance and at certain times and in some districts it is even more widespread. In 1923 not less than 1,727 deaths occurred in Greece, mostly among refugees. In recent years the frequency of the disease decreased considerably.

Amebic dysentery cannot be regarded as endemic in Greece. Apart from very rare local instances, the source of infection in most cases of this disease was Egypt. However, local epidemics of amebic dysentery had occurred on the Macedonian front from 1916 to 1919.

Cerebrospinal Meningitis

In Greece cerebrospinal meningitis has followed the general trend of the disease in Europe, but it has never assumed a serious epidemic character. It became increasingly prevalent from 1914 to 1918, reached a low level in 1923, rose again in 1928 and 1929 and again in 1936, when its prevalence was also

increasing in most countries of Central and Southeastern Europe. The number of cases reported in Greece from 1937 to 1940 averaged 420 per year against an annual average of 200 from 1924 to 1936.

Owing to the increasing prevalence in Bulgaria and Turkey in 1939, and to the alarming spread in Yugoslavia in 1940, cerebrospinal meningitis is of special interest with regard to the epidemiological situation of Greece.

Dengue

This mosquito-borne disease is endemic in Greece and other Mediterranean countries; it deserves special mention in connection with the epidemic which swept over Greece in 1928, and which marked the beginning of important improvements in sanitation and led to the reorganization of the Greek Health Service.

The epidemic presented the most dramatic display of the rapid spread of dengue on record; in Athens about 239,000 cases occurred in the first month, with over 400 deaths. About 630 deaths were recorded in Athens and over 1,000 in the whole of Greece up to the end of September, or not less than 1 per 1,000 of the population of towns affected. The total number of cases was estimated at 1,500,000.

It was known that dengue was widespread in 1927 in the Mediterranean countries (Spain, Syria, Palestine, Cairo, Tunis, and Algiers) and about 20,000 cases were recorded in Athens. On the other hand, it was demonstrated in Athens that the virus was retained by the Aedes aegypti which hibernated in protected places. The 1928 epidemic in Greece was characterized by unusual severity of the clinical features; nervous symptoms were prominent and encephalitic and psychical phenomena occurred. Localized edema and red patches signaled local involvement of the peripheral vasomotor system. The deaths in Greece were mainly

among the aged and invalids.

As a result of the epidemic, far-reaching sanitary measures were adopted in Greece. The British Medical Journal noted in 1928 (II, p. 807): "It is easy to believe that nothing short of such a dramatic outbreak could bring about such measures in that country, and Greece may count itself fortunate that it was not visited by one of the death-dealing pestilences."

Rabies

Some idea of the frequency of rabies in Greece may be gathered from the number of cases treated in Athens and Thessaloniki.

		Cases Treated	
<u>Athens</u>	1936	1,692	- 1 death
	1937	1,596	- 2 deaths
<u>Thessaloniki</u>	1931	1,467	
	1932	1,094	
	1933	753	
	1934	786	
	1935	843	
	1936	775	
	1937	928	
		6,646	- 8 deaths

The deaths reported from rabies in Greece were 1936, 15; 1937, 25; and 1938, 23. A special decree describing precautions to be taken with animals suffering from rabies or suspected of being bitten by rabid animals was issued in 1938.

Other Diseases

Undulant Fever is prevalent in Greece; 69 cases were reported and 29 deaths were ascribed to this disease in 1938.

Pappataci or Three-Day Fever occurs occasionally in epidemic form in Greece where sandflies (Phlebotomi) are common. In one outbreak (1937) at Souda

near Canea (Crete) about 100 cases occurred among soldiers. Among phlebotomi captured in this locality 98 per cent were P. papatassi.

Spirochaetosis Ictero-haemorrhagica (Weil's Disease). This disease has on several occasions been found in Greece. One epidemic of 32 cases occurred in Cephalonia (Province of Sami) in February-May, 1932. Rain water is collected locally for drinking purposes, and the cisterns were found contaminated by rats. All persons attacked had used water from such cisterns.

A similar outbreak was described in Corfu. Leptospira were found in rats in Syra, Athens, and Piraeus.

PUBLIC ASSISTANCE AND WELFARE

Protection of Maternity and Infancy

Since 1929 the Department of Public Assistance of the Ministry of Health (see page 10) is assisted by the National Council for Maternity and Infant Welfare, presided over by the Minister. The Council is responsible for supervising and directing the activities in the field of maternity and child welfare carried out by the government and various welfare organizations. The main body through which the program of welfare work of the Ministry is carried out is the Patriotic Welfare Foundation (Oeuvre Patriotique de Prevoyance Sociale et d'Assistance). Grants for specified purposes are made by the Ministry to the Foundation which, although a government organization, is autonomous.

The Patriotic Welfare Foundation operates, mostly in Attica and Boeotia, a great variety of institutions including prenatal consultation centers, dispensaries for infants, foundling homes, a school for nurses and visiting nurses,

Reference:

Walch-Sorgdrager, B.: Leptospiroses. Bulletin of the Health Organisation of the League of Nations, 8, 1939, References, p. 351.

convalescent homes for school children, trachoma dispensaries for children, and children's summer camps. The Foundation also operates 38 centers in various towns of Greece. The annual grant made by the Ministry for these provincial centers was increased from 6,500,000 in 1937-1938 to 14,000,000 drachmai in 1938-1939. In addition to the Patriotic Welfare Foundation there is a number of private organizations at work in several towns such as, for instance, the Children's House at Thessaloniki.

National Orphanages

In 1938 there were 33 orphanages under the Department of Public Assistance; the number of children assisted was 3,169, and the expenditure involved about 34 million drachmai.

Aid to Indigents

A large number of popular canteens are operated in Greece. During the winter (1937-1938) over 9 million meals were provided to the indigent and to poor children of the primary schools. Lodging houses for the homeless are available in Athens, Piraeus, and Thessaloniki.

In 1938 some 400 indigent persons were placed, at the expense of the government, in private welfare establishments. Numerous local and private welfare funds receive grants from the Ministry.

Special Emergencies

A special service within the Department of Public Assistance provides assistance and funds to local authorities in connection with earthquakes, floods, fires, etc.

War Victims

The official organization dealing with the protection and assistance to war victims is the War Victims Fund. In 1938 additional funds were provided by the Ministry to this organization from the resources of the Social Insurance Institute, an autonomous organization connected with the Ministry of Labour (see page 23).

PUBLIC RELIEF

The Department of Public Relief of the Ministry of Health deals with housing accommodations for the poorer classes and the care of refugees and unemployed. In 1938 a sum of 178 million drachmai was made available for the urban settlement of refugees; 2,510 houses were provided for housing of the refugees, and some 2,500 further houses were to be made available in 1939.

References:

Compte-rendu des activités du Ministère de l'Hygiène publique et de l'Assistance, 1937-1938. Archives d'Hygiène, 2, 1938, pp. 325-330.

Congrès balcanique de la protection de l'enfance. C.-R. du deuxième Congrès, Belgrade, 1938.

RESTRICTED

-44-

APPENDIX A

M A P S

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6 - 7



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RESTRICTED

- 49 -

APPENDIX B

T A B L E S

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Greece - Distribution of the Population by Geographical Divisions and Departments in 1938, and the Population of Departmental Capitals (Census, 1928).

Department	Population (1938)	Capital	Population of Capital (1928)
<u>Central Greece and Euboea</u>	1,799,169		
Aetolia and Acarnania	255,862	Missolonghi	9,270
Attica and Boeotia	1,144,330	Athens	392,781
Euboea	179,523	Chalcis	17,297
Phthiotis and Phocis	219,454	Lamia	14,205
<u>Peloponnese</u>	1,185,046		
Achaia	213,291	Patras	61,278
Arcadia	187,327	Tripolitsa	14,397
Argolis and Corinth	190,184	Nauplia	7,163
Elis	143,554	Pyrgos	19,336
Laconia	148,499	Sparta	5,799
Messenia	297,191	Kalamata	28,955
<u>Cyclades Islands</u>	146,987		
Cyclades	146,987	Hermoupolis (Syra)	21,150
<u>Ionian Islands</u>	231,510		
Cephalonia	72,140	Argostolion	8,293
Corfu	114,620	Corfu	32,221
Zante	44,750	Zante	11,609
<u>Thessaly</u>	562,020		
Larissa	312,272	Larissa	23,899
Trikkala	249,748	Trikkala	18,682
<u>Macedonia</u>	1,686,479		
Agion Oros (Mount Athos)	4,858	Karyai	305
Cavalla	139,309	Cavalla	49,980
Chalcidice	77,222	Polygyros	2,477
Drama	139,583	Drama	29,339
Florina	152,809	Florina	10,585
Kilkis	95,593	Kilkis	6,864
Kozane	202,849	Kozane	12,702
Pella	117,990	Edessa	13,115
Serres	216,569	Serres	29,640
Thessaloniki*	539,697	Thessaloniki*	236,524
<u>Epirus</u>	363,041		
Arta	62,462	Arta	7,468
Preveza	77,368	Preveza	8,659
Thesprotia	64,191	Hegoumenitsa	564
Yanina	159,020	Yanina	20,485
<u>Crete</u>	441,687		
Canea	126,654	Canea	22,122
Heraklion	162,978	Heraklion (Candia)	33,404
Lassithi	75,914	Hagios Nicholas	1,543
Rethymno	76,141	Rethymno	8,632
<u>Aegean Islands</u>	337,986		
Chios	32,914	Chios	22,122
Lesbos	177,214	Mytilene	27,870
Samos	77,858	Limen Vatheos	8,636
<u>Thrace</u>	354,889		
Hevros	151,260	Alexandroupolis	12,009
Rhodope	203,629	Komotene	20,136
		TOTAL	7,108,814

*Official name for Saloniki since August, 1937.

Table 2

Greece - Hospitals and Institutions, 1938

Public and private institutions and number of beds,
by town, department, legal status, and specialty.

Department	Name	Spe- cialty	Legal Status	Town	Number of Beds
<u>Aetolia-Acarania</u>	Hatzikosta	Gen.	Munic.	Missolonghi	30
	"Hag. Trias"	Gen.	State	Agrinion	25
<u>Argolis and Corinth</u>	San. Service, Argolis				
	San. Service, Corinth				
<u>Arcadia</u>	Evangelistria	Gen.	State	Tripolitsa	50
<u>Arta</u>					
<u>Attica and Boeotia</u>	San. Service, A. & B.				
	Evangelismos	Gen.	P.W.	Athens	620
	Red Cross Hospital	Gen.	P.W.	Athens	250
	"Ipokration"	Gen.	State	Athens	226
	"Laicon"	Gen.	State	Athens	174
	"Hag. Olga"	Gen.	State	Nea Ionia	100
	"Polykliniki"	Gen.	P.W.	Athens	44
	"Elpis"	Gen.	Munic.	Athens	294
	Hag. Sofia and Agl.				
	Kyriacou	G.C.	State	Athens	225
	"Hagia Eleni"	Gen.	P.W.	Athens	38
	Social Insurance				
	Pathological Clinic	Gen.	S.I.	Athens	47
	Infectious Diseases Hosp	I.D.	State	Athens	100
	Leprosy Station	I.D.	State	Athens	178
	"Aegenition"	M.	U.	Athens	124
	"Areteion"	Obst.	U.	Athens	112
	"Sotiria"	Tb.H.	State	Athens	1,500
	"G. Funk"	Tb.S.	P.W.	Parnitha	187
	"Andreas Syngros"	V.D.	State	Athens	370
	"Mar. Iliades"	Obst.	P.W.	Athens	135
	Public Maternity Hosp.	Obst.	State	Athens	110
	Mat. Hosp. "Elpis"	Obst.	Munic.	Athens	44
	"Asēlipieion"	Tb.S.	P.W.	Voula	440
	Public Mental Asylum	M.	State	Voula	2,000
	"Dromokaition"	M.	P.W.	Voula	663
	French Hosp. "Laurium"	Gen.	S.I.	Laurium	8
	Ophthalmological Disp.	Ophth.	U.	Athens	55
	Municipal, Children	G.C.	Munic.	Athens	270
	Asylum for Incurables	Chr.	P.W.	Athens	275
	Anti-cancer Institute				
	"Hag. Savas"	Chr.	P.W.	Athens	70

RESTRICTED

Department	Name	Spec- ialty	Legal Status	Town	Number of Beds
<u>Attica & Boeotia</u> (Continued)					
	<u>San. Service Piraeus</u>				
	"Zannion"	Gen.	Munic.	Piraeus	292
	Gen. Model Pop. Hosp.	Gen.	State	N. Kokkinia	60
	Hosp. Asylum "Hagios Dionissios"	Gen.	P.W.	Aegina	20
<u>Achaia</u>	Gen. Municipal Hospital	Gen.	Munic.	Patras	143
	Gen. Municipal Hospital	Gen.	Munic.	Aigion	42
<u>Drama</u>	General State Hospital	Gen.	State	Drama	100
	Gen. Municipal Hospital	Gen.	Munic.	Drama	60
	Polykliniki C.A.O.T.*	Gen.	S.I.	Drama	22
<u>Hevros</u>	General State Hospital	Gen.	State	Alexandropolis	40
<u>Euboea</u>	Gen. Hosp. for Refugees	Gen.	State	Chaleis	35
<u>Zante</u>	General Hospital, Social Insurance Bureau	Gen.	State	Zante	28
<u>Elis</u>	"Manolopoulion"	Gen.	Munic.	Pyrgos	31
<u>Heraklion</u>	"Pananiion"	Gen.	Munic.	Heraklion	80
	"Geronymanion"	G.C.	P.W.	Heraklion	70
	Venereal Disease Hospital	V.D.	State	Heraklion	25
<u>Thessaloniki</u>	Central General Hospital	Gen.	State	Thessaloniki	265
	"Theagenion"	Gen.	P.W.	Thessaloniki	50
	General Municipal Hospital	Gen.	Munic.	Thessaloniki	425
	Polykliniki C.A.O.T.*	Gen.	S.I.	Thessaloniki	32
	General Hospital "Hirsch"	Gen.	R.M.	Thessaloniki	97
	General Italian Hospital	Gen.	F.W.	Thessaloniki	60
	General Hospital C.T.I.M.N. Calcedonos*	Gen.	S.I.	Thessaloniki	16
	General Hospital C.T.I.M. Ergochori	Gen.	S.I.	Thessaloniki	13
	Central General Hospital	Gen.	State	Veroia	45
	Infectious Diseases Hosp.	I.D.	State	Thessaloniki	113
	Venereal Disease Hospital	V.D.	State	Thessaloniki	150
	Public Hosp. Mental Dis.	M.	State	Thessaloniki	308
	Public Obstetric Clinic	Obst.	State	Thessaloniki	74
	Hirsch's Asylum	M.	F.W.	Thessaloniki	75
	Tb. San. "Asvestochori"	Tb.S.	State	Thessaloniki	600
	San. Hiera Moni Petras, Olympos	Tb.S.	State	Thessaloniki	250

Department	Name	Specialty	Legal Status	Town	Number of Beds
<u>Yanina</u>	"Hatzikosta"	Gen.	P.W.	Yanina	42
	"Agapi"	Gen.	Munic.	Yanina	18
	Hospital for Skin and Venereal Disease	V.D.	State	Yanina	17
<u>Cavalla</u>	"Evangelismos"	Gen.	Munic.	Cavalla	110
	Sanatorium "Elpis"	Tb.S.	P.W.	Cavalla	64
<u>Corfu</u>	"Asticon"	Gen.	P.W.	Corfu	45
	Public Hospital for Mental Diseases	M.	State	Corfu	352
<u>Cephalonia</u>	"Vallianion"	Gen.	P.W.	Cephalonia	235
	"Veghion" Hospital for Mental Diseases	M.	P.W.	Cephalonia	100
	Union of Communes General Hospital	Gen.	Com.	Kilkis	58
	General Hospital	Gen.	State	Goumenitsa	25
<u>Kozane</u>	General State Hospital	Gen.	State	Kozane	40
	General State Hospital	Gen.	State	Grevena	30
<u>Cyclades Islands</u>	"Vardakion & Pruion"	Gen.	State	Hermoupolis	70
	"Evangelismos"	Gen.	R.M.	Tenos	15
	"Embirikeion"	Gen.	Com.	Andros	22
	Tuberculosis Sanatorium	Tb.S.	P.W.	Syra	24
	Mental Asylum	M.	P.W.	Syra	53
<u>Laconia</u>	"Hag. Anargyri"	Gen.	P.W.	Sparta	16
	"Hypapanti"	Gen.	P.W.	Gytheion	8
<u>Larissa</u>	San. Serv., Larissa				
	"Koutlibanion"	Gen.	Munic.	Larissa	50
	Bout. Soc. General Hosp.	Gen.	S.I.	Larissa	24
	San. Serv. Magnesia and Almyros				
	"Achillopoution"	Gen.	Munic.	Volos	120
	Tsitsilianon "Kalanera"	Gen.	P.W.	Vyzitsa	18
<u>Lassithi</u>	Hospital for Lepers, "Hag. Panteleimon"	I.D.	State	Spinaloga	300
<u>Lesbos</u>	"Vostanion Hieron"	Gen.	P.W.	Mytilene	175
	Sanatorium "Hygia"	Tb.S.	State	Lesbos	40
<u>Messenia</u>	"Alexandrakion"	Gen.	P.W.	Kalamata	32
	"Analypsis" C.R.H.	Gen.	P.W.	Chora, Triph.	5
	Sanatorium "Ithomi"	Tb.S.	State	Vytina	75
	Sanatorium "Prophete Elie"	Tb.S.	P.W.	Kalamata	30

Department	Name	Specialty	Legal Status	Town	Number of Beds
<u>Pella</u>	General State Hospital	Gen.	State	Edessa	50
	General State Hospital	Gen.	State	Yanitza	30
<u>Preveza</u>	General Municipal Hospital	Gen.	Munic.	Preveza	30
	General Municipal Hospital	Gen.	Munic.	Leucade	28
<u>Rethymno</u>	General Municipal Hospital	Gen.	Munic.	Rethymno	40
<u>Rhodope</u>	"Sismanglou"	Gen.	State	Komotene	70
	General Hospital	Gen.	Munic.	Xanthe	44
<u>Samos</u>	"Hag. Panteleimon"	Gen.	P.W.	Samos	27
	Leprosy Hospital	I.D.	State	Carlovassi	50
<u>Serres</u>	General Hospital for Refugees	Gen.	State	Serres	60
	General Hospital C.T.I.M.	Gen.	S.I.	Phethelino	37
<u>Trikkala</u>	"Hag. Seraphim"	Gen.	P.W.	Karditsa	15
<u>Phthiotis & Phocis</u>	Tuberculosis Mountain San.	Tb.S.	State	Antinissa	50
<u>Florina</u>	"Helene Dimitriou"	Gen.	Munic.	Florina	76
<u>Calcidice</u>	Gen. Hosp. Calcidice	Gen.	State	Calamatis	34
<u>Canea</u>	General Municipal Hospital	Gen.	Munic.	Canea	55
	Public Sanatorium	Tb.S.	State	Canea	120
	Public Municipal Hospital	M.	State	Canea	300
	Venereal Disease Hospital	V.D.	State	Canea	20
<u>Chios</u>	"Skylitsion"	Gen.	Munic.	Chios	217
	Hospital for Skin and Venereal Disease	V.D.	State	Chios	16
	Public Ophthalmic Disp.	Ophth.	State	Chios	4
	Leprosy Hospital	I.D.	Munic.	Chios	32
	Maternity Hospital				
	"Kokkalien"	Obst	P.W.	Chios	19

* Social Insurance Funds.

AbbreviationsSpecialty:Legal Status:

Chr.	Chronic Diseases	Com.	Communal
Gen.	General Hospital	F.W.	Foreign Philanthropic Association
G.C.	General Hospital for Children	Munic.	Municipal
I.D.	Infectious Diseases	R.M.	Religious Minority
M.	Mental Diseases	P.W.	Private Philanthropic Association
Obst.	Maternity Hospital	S.I.	Social Insurance
Ophth.	Ophthalmological Clinic	State	State
Tb.	Tuberculosis Sanatorium or Hospital	U.	National University

Tuberculosis Mortality - 1937

Departments	Deaths		Mortality per 10,000 Inhabitants		Tuberculosis Deaths per 1,000 Deaths All Causes
	Capital	Whole Depart- ment	Capital	Whole Depart- ment	Whole Department
<u>Central Greece and Euboea</u>					
Aetolia and Acarnania	18	218	18.18	8.72	58.51
Attica and Boeotia	2,108	3,065	42.79	27.17	173.78
Euboea	50	172	24.20	9.78	78.18
Phthiotis and Phocis	16	126	9.56	5.86	51.47
<u>Peloponnese</u>					
Achaia	122	205	16.71	9.77	75.28
Archadia	12	105	7.77	5.70	43.93
Argolis and Corinth	8	134	10.62	10.40	79.05
Elis	19	119	8.51	8.15	57.27
Laconia	9	101	10.36	6.22	40.27
Messenia	64	203	19.57	7.35	50.35
<u>Cyclades Islands</u>					
Cyclades	31	149	13.72	10.28	80.85
<u>Ionian Islands</u>					
Cephalonia	31	83	34.25	11.60	80.58
Corfu	95	201	27.35	17.67	114.46
Zante	18	33	14.13	7.45	48.10
<u>Thessaly</u>					
Larissa	33	338	12.16	11.02	70.77
Trikkala	37	167	15.96	6.88	44.71
<u>Macedonia</u>					
Cavalla	87	183	15.86	13.44	99.35
Chalcidice	1	57	2.59	7.10	53.12
Drama	73	190	20.85	14.01	95.33
Florina	14	96	11.94	6.44	42.53
Kozane	16	133	11.76	6.70	42.02
Pella	23	102	15.60	9.66	52.44
Serres	58	258	18.16	12.25	61.75
Thessaloniki*(Saloniki)	461	1,115	16.86	17.93	101.06
<u>Epirus</u>					
Arta	12	49	14.37	8.05	52.35
Preveza	10	44	10.10	5.79	34.40
Yanina**	38	215	17.63	9.83	54.71
<u>Crete</u>					
Canea	83	124	22.88	9.94	78.48
Heraklion	47	110	10.97	6.89	49.77
Iassithi	1	35	5.05	4.68	39.19
Rethymno	5	27	4.28	3.60	27.25
<u>Aegean Islands</u>					
Chios	35	62	12.59	7.56	53.59
Lesbos	47	172	13.74	9.80	74.30
Samos	9	79	9.92	10.26	81.36
<u>Thrace</u>					
Hevros	19	150	24.41	10.17	60.88
Rhodope	38	270	11.77	13.60	69.37

*Including Kilkis

**Including Thesprotia

SANATORIUMS AND TUBERCULOSIS HOSPITALS - 1939

Government Institutions (L. 965 Special Laws)

	<u>Department</u>	<u>No. of Beds</u>
Sanatorium "Sotiria"	Attica and Boeotia	1,500
" " "Asvestochorium"	Thessaloniki	666
" " "Ieras Monis Petras Olympou"	"	250
" " "Ithomi" Vitina	Arcadia	75
Hospital for Tuberculous Tuberculosis Hospital "Hygia," Mytilene	Canea	120
Sanatorium Antinissa	Lesbos	40
	Phthiotis and Phocis	50
	Total	<u>2,701</u>

Privately Endowed Institutions

Hospital "Asclepion," Voulas (Greek Red Cross)	Attica and Boeotia	450
Tuberculosis Hospital "Avrofiliton," Syros	Cyclades	24
Tuberculosis Hospital "Prophitou Hiliou," Kalamata	Messenia	30
Sanatorium Parnes	Attica and Boeotia	180
Tuberculosis Hospital "Elpis"	Cavalla	64
	Total	<u>748</u>

Private Institutions

Sanatorium Melission		100
" " Pentelis		60
" " Melission		20
" " Daou Pentelis "Zoodochos Pigi"		38
" " Dionyssou		100
" " Melission		20
" " "		23
" " Dionyssou		110
Orthopedic Tuberculosis Sanatorium, Glyfada		15
Anti-Tuberculosis Clinic, Athens		20
Sanatorium Papadias Navpaktias		15
" " Piliou, Volos		70
" " "		50
Anti-Tuberculosis Clinic, Thessaloniki		20
Sanatorium Castorias		20
Anti-Tuberculous Clinic Spilia Pediados	Heraklion	20
	Total	<u>701</u>

Names of Officials, 1940-1941

Dr. Georges Joakimoglou, President of the Conseil Supérieur d'Hygiène (July, 1940)

Dr. Phocion Copanaris, Director General of Health, Ministry of Health and Public Assistance, 11 rue de l'Académie, Athens (Feb., 1941)

Dr. Sotiras Karabetsos, Director of Hospitals (July, 1940)

Dr. Costis Charitakis, Director of Social Hygiene (July, 1940)

Dr. An. Katsoyannis, Director of Public Health (July, 1940)

Dr. Al. Phocas, Inspector General, Pharmacies (July, 1940)

Dr. Chr. Evangelou, Inspector General, Venereal Disease Services (July, 1940)

Dr. L. Bastis, Inspector General, Trachoma Service (July, 1940)

Dr. Gregoire Livadas, Director of the Athens Health Center and School of Hygiene, 196 Leophoros Alexandras, Athens (Cable: Centrhygie) (Feb., 1941)

Dr. Thidakellarides, Chief of the Section of Publicity, Statistics and Propaganda, Ministry of Health and Public Assistance (Feb., 1941)

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Bulletin mensuel de statistique (data for towns, monthly)

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Monthly tables of infectious diseases, cases and deaths by departments and towns. Archeia Ygiene, Archives d'Hygiène. Monthly bulletin published since 1937, contains reports on epidemiology, organization of public health and recent legislation; includes also monthly tables referring to infectious diseases. In Greek with summary in French.

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-58-

APPENDIX D

INSECT AND ANIMAL PESTS --- THEIR CONTROL

(1) Disease Carriers

- (a) Mosquitoes (anopheline)
- (b) Mosquitoes (aedes aegypti)
- (c) Lice
- (d) Fleas
- (e) Sandflies
- (f) Ticks
- (g) Flies
- (h) Rats

(2) Pests



APPENDIX D(1) Disease Carriers.

(a) Anopheline Mosquitoes. There is no area of Greece free of mosquitoes, even the Ionian and Aegean Islands. Anopheles maculipennis occurs throughout Greece, the common forms of this malarial vector being A. maculipennis var. typicus and A. maculipennis var. subalpinus. Anopheles elutus (sacharovi), formerly classified as a variety of maculipennis is an important vector. Anopheles superpictus, A. algeriensis, A. claviger (bifurcatus), A. hyrcanus, A. marteri, A. plumbeus and A. italicus are the less important Anopheline malarial mosquitoes of Greece. Anopheles gambia has been reported from Greece on one occasion, but this was never substantiated. The characteristic breeding places and habits of these mosquitoes are as follows: A. elutus is usually found in brackish water so that it is distributed along the coastal plains. This mosquito bites man by choice and is a dangerous carrier of malaria. A. typicus and A. maculipennis subalpinus bite cattle by choice, although they are minor carriers of human malaria. They usually breed in slow moving fresh water. A. superpictus is found most frequently in mountain streams with rough, rocky beds, where the larvae live in sheltered spots, and in irrigation canals and channels. A. superpictus is found at altitudes of as much as 4,000 feet. A. elutus and A. maculipennis typicus are the usual malaria vectors in the plains. Both A. maculipennis and A. elutus pass the winter in the adult stage, females taking up their quarters in houses or barns; but while A. maculipennis is usually quiescent during this season of the year, A. elutus continues to feed.

(b) Aedes aegypti Mosquitoes. Aedes aegypti mosquitoes are found throughout Greece and the Grecian Islands. These mosquitoes are the vectors of urban yellow fever in other parts of the world, and of dengue fever. Although yellow fever has not been reported from Greece, dengue fever has occurred in several large epidemic outbreaks within recent years.

(c) Lice. The common body louse, Pediculus corporis, infests many people in Greece, even during normal times, and recent reports indicate that lousiness has become more common since the German occupation. The general uncleanness of the people, as a result of lack of soap, fuel, clothing, or in many cases of even the initiative to bathe, have all led to an increase of louse infestation. Human cases of typhus fever have occurred annually, and it is to be expected that this disease will become of increasing importance. Louse-borne relapsing fever also is considered as being endemic, and during the 1914-1918 war cases of louse-borne trench fever occurred in this area.

(d) Fleas. Although plague has not been reported from Greece since 1930, many of the cities of Greece have large rat populations which

harbor the common rat flea, Xenopsylla cheopis, the usual vector of human plague. Due to the presence of plague in nearby areas and the breakdown of rat control measures in Greece, it is possible that this disease will become of importance. Eighty-four per cent of 11,000 rat fleas taken in Athens were found to be Xenopsylla cheopis and there was an average of 5.3 fleas per rat captured.

(e) Sandflies. There are a number of species of sandfly in Greece and on the Grecian Islands. The most common type is Phlebotomus papatasi, although Phlebotomus major P. sergenti and P. perfiliewi (Macedonicus) occur. These flies carry sandfly fever, a disease that is common throughout Greece, especially in the vicinity of ancient ruins. They are most active in the hot months, May to October, and usually bite at dusk. Because of the short distances that the sandfly is capable of flying, the Ministry of Health at one time suggested that houses be built at least 100 yards from ruins and rubble heaps. In Greece, Phlebotomus major is thought to be the vector of kala-azar. This disease is fairly well localized to Athens, the hill villages near Argos, Crete, and the Aegean Islands of Spezzia and Hydra. Dermal leishmaniasis (oriental sore) is also thought to be transmitted by sandflies.

(f) Ticks. The dog tick, Rhipicephalus sanguineus, is the transmitter of fievre boutonneuse, a disease that is found in widely disseminated parts of Greece.

(g) Flies. The common housefly, Musca domestica, found in great numbers in all parts of Greece, is undoubtedly responsible for many of the cases of the enteric diseases that occur, for they are capable of carrying the causative organisms of these diseases by mechanical means. Little is done to combat these obnoxious and dangerous insects.

The large grayfly, Wohlfahrtia magnifica, causes myiasis in humans by depositing its maggots in wounds or cuts. This fly is most common in Macedonia and northern Greece.

(h) Rats. Rattus norvegicus, the brown rat, and Rattus rattus, the black rat, are found throughout Greece and are especially prevalent in the port cities, where they are found about warehouses and in sewers. These rats usually carry the rat flea, Xenopsylla cheopis, and although there has been no human plague in recent years, plague infected rats have been found from time to time. Murine typhus fever has been reported from nearby Turkey in recent years; and it is said that a few cases of flea-borne typhus fever occur in Greece each year. Weil's disease and other forms of leptospirosis are reported from Athens.

(2) Pests. Many Culex mosquitoes, especially Culex pipiens, a troublesome pest which commonly breeds in cesspits; bedbugs; fleas; straw mites; and the black spider, Latrodectus l3-guttata are found. The bite of the

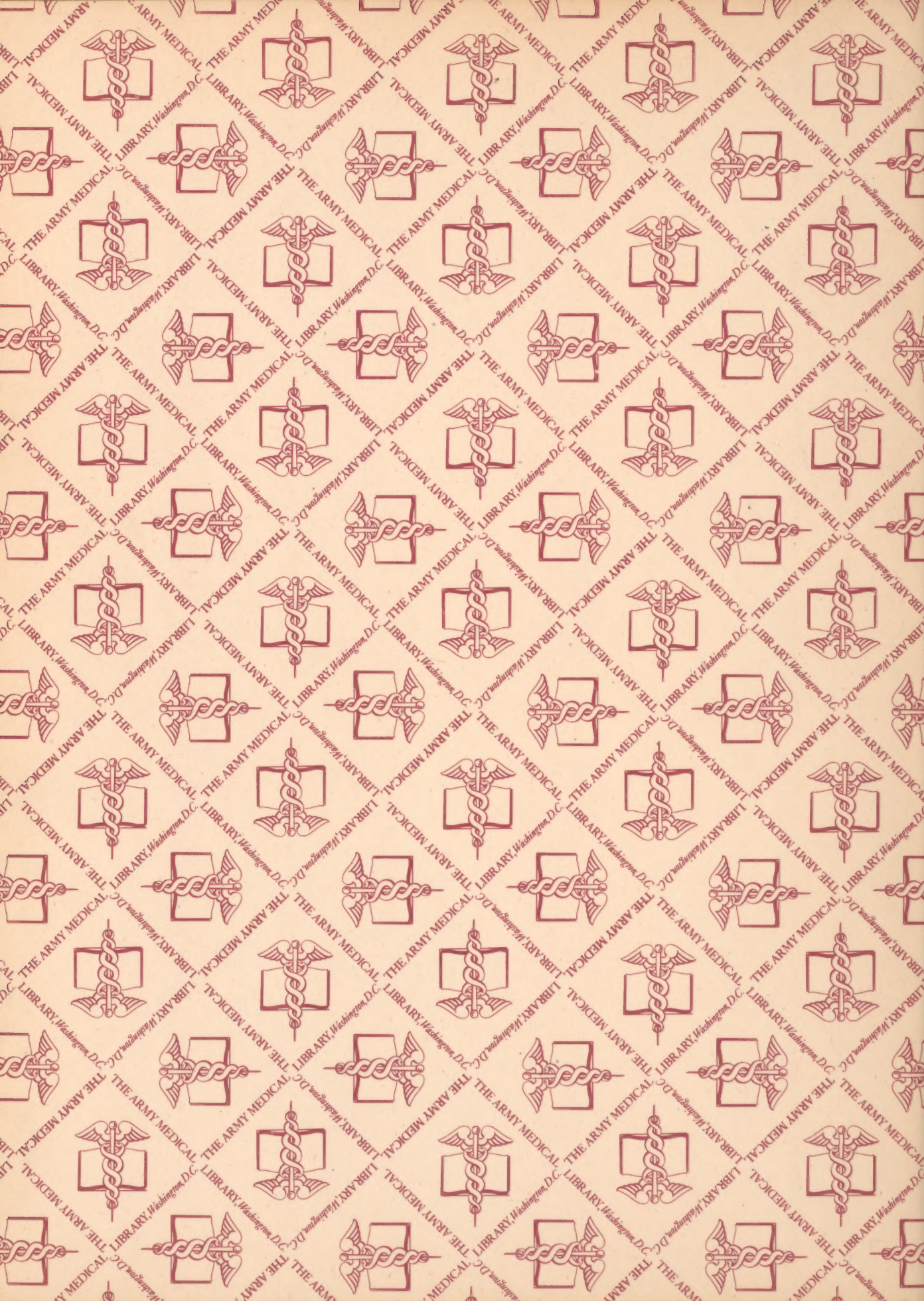
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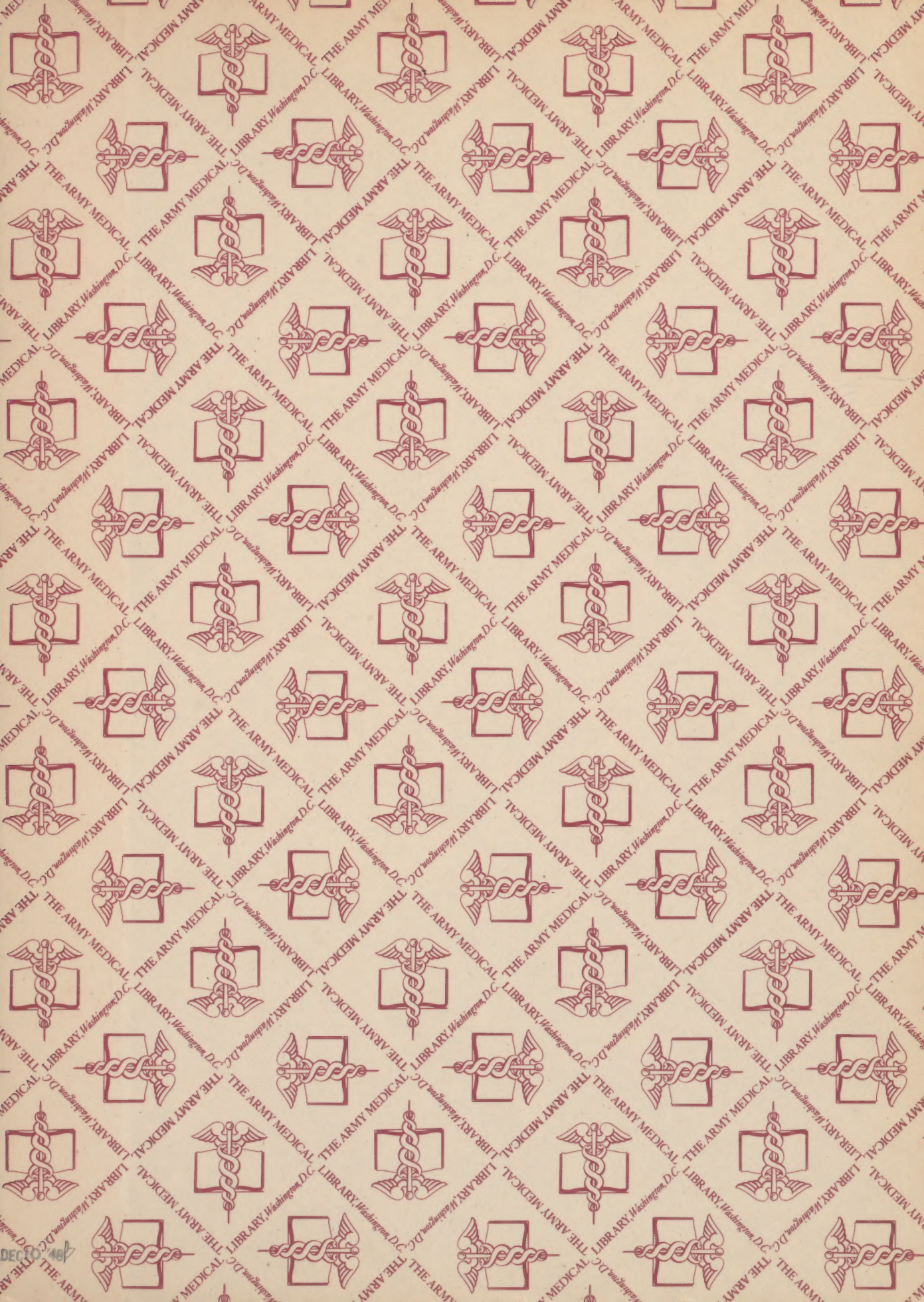
-61-

latter produces a severe toxemia in sensitive individuals. Poisonous snakes in Greece are all members of the viper family, and they are quite common in uncultivated areas. They are small and not particularly aggressive, so that snakebite should be of minor importance.

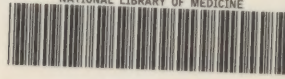
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